

Example from profile Rolling Mill

Fig. 1

System : NOINAWSS1MNI2 System - Workplace : Safety Engineering Workplace

Aspects of 'SIF_22_PS-003'

Category name	Inherited	Descr...	Type
2003_PST_XSV_...	False		Object
CauseAndEffect	False	Caus...	Cause
Windows Applic...	False	Instr...	Window
Name	False	The ...	Basic
Safety Structure	False	Struc...	Basic

SIF_22_PS-003: CauseAndEffect

Main | Menu | Export | Import | Refresh | Delete

Table Functional Details

Item	Name	Effect	Description	1	2	3	4	5	6	7	8	9	10
1	Control	Normal											
2	Reset	Reset											
3	Block	Block											
4	Interlock	Interlock											
5	Shutdown	Shutdown											
6	Restart	Restart											
7	Emergency Stop	Emergency Stop											
8	Emergency Stop	Emergency Stop											
9	Emergency Stop	Emergency Stop											
10	Emergency Stop	Emergency Stop											
11	Emergency Stop	Emergency Stop											
12	Emergency Stop	Emergency Stop											
13	Emergency Stop	Emergency Stop											
14	Emergency Stop	Emergency Stop											
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9	Emergency Stop	Emergency Stop											

1

ABB Safety Manager, Cause and Effect Matrix editor (Safety Builder)

User Login

User name:

Password: ☒ Use Windows Logon Security

Server:

2

ABB Safety Manager, Cause and Effect Matrix editor (Safety Builder)

Cause & Effect Matrix

Select Matrix:

3

ABB Safety Manager, Cause and Effect Matrix editor (Safety Builder)

Plant

Fig. 3

ABB Safety Manager, Cause and Effect Matrix editor (Safety Builder)

Plant
+ Areal1

Cause and Effect Matrix for AAA

#	Name	Description	Designation	1	2	3	4	Effekt
1	ESDLevel1		ZLEV1					X
2								
3								
4								
5								
6								
7								

#	Name	Description	Designation	1	2	3	4	Effekt
1	Cause1		ZCAU1	X				X
2	reqsfs							
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								

4

ABB Safety Manager, Cause and Effect Matrix editor (Safety Builder)

Plant
+ Areal1

Cause and Effect Matrix for AAA

#	Name	Description	Designation	1	2	3	4	Effekt
1	ESDLevel1		ZLEV1					X
2								
3								
4								
5								
6								
7								

#	Name	Description	Designation	1	2	3	4	Effekt
1	Cause1		ZCAU1	X				X
2	reqsfs							
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								

Create Cause
Delete Effect
Level
Block
Reset
Area or Equipment

5a

Fig. 3 cont.

ABB Safety Manager, Cause and Effect Matrix editor (Safety Builder)

Show all Levels only
Hide levels

Plant
Area1

Cause and Effect Matrix for AAA

#	Name	Description	Designation	1	2	3	4	Effekt
1	ESDLevel1		ZLEV1					X
2								
3								
4								
5								
6								
7								

#	Name	Description	Designation	1	2	3	4	Effekt
1	Cause1		ZCAU1	X				X
2	regsfs							
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								

5b

ABB Safety Manager, Cause and Effect Matrix editor (Safety Builder)

Show signals
Hide signals
Collapse signals

Plant
Area1

Cause and Effect Matrix for AAA

#	Name	Description	Designation	1	2	3	4	Effekt
1	ESDLevel1		ZLEV1					X
2								
3								
4								
5								
6								
7								

#	Name	Description	Designation	1	2	3	4	Effekt
1	Cause1		ZCAU1	X				X
2	regsfs							
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								

5c

#	Name	Description	Designation	1	2	3	4	Effekt
1	Cause1		ZCAU1	X				X
2	regsfs							
3								
4								
5								
6								

6

Fig. 3. cont.

6

Cause and Effect Matrix for AAA									
#	Name	Description	Designation	1	2	3	4	Effekt	
1	ESDLevel1		ZLEV1						X
2									
3									
4									
5									
6									
7									
#	Name	Description	Designation	1	2	3	4	Effekt	
1	Cause1		ZCAU1	X					X
2	regsfs								
3									

7a

CEM Cause: Cause1

Variable 3 Signals

Name: Cause1 Area: Plant

Designation: ZCAU1 Delay (s): 0

Designation:

Active: NORMAL

Latchable ☐

Blockable ☐

< Play Next >

Position no: 1

7b

CEM Cause: Cause1

Variable 3 Signals

Input Datatype: bcol Confirmation criteria: 1 Signals out of: 3

Signals U			
Name	Description	Assign	Normal
Samplecolla1	Sample signal	IX0.11.1.1	ND
Samplecolla2	Sample signal	Unassigned	ND
Samplecolla3	Sample signal	Unassigned	ND

Show available signals OK Apply Cancel

Edit Cause 11/2/2003 S 48 Pm

Fig. 3. cont.

7c

CEM Cause: Cause1

Variable

Input Datatype: Confirmation

Signals		
Name	Description	
Samplecolla1	Sample signal	IXI
Samplecolla2	Sample signal	Ur
Samplecolla3	Sample signal	Ur

Hide available signals Hide signals

Signals

CEM Cause: Cause1

Variable

Input Datatype: Confirma

Sig		
Name	Description	
Samplecolla1	Sample signal	
Samplecolla2	Sample signal	
Samplecolla3	Sample signal	

Hide available signals Hide si

Edit Cause

8a

ABB Safety Manager, Cause and Effect Matrix editor (Safety Builder)

Plant
+ Areal1

Cause and Effect Matrix for AAA

#	Name	Description	Designation	1	2	3	4	Effect
1	ESDLevel1		ZLEV1					X
2								
3								
4								
5								
6								
7								
1	Cause1		ZCAU1	X				X
2	regfs							
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								

Fig. 3 cont.

ABB Safety Manager, Cause and Effect Matrix editor (Safety Builder)

Plant
+ Areal1

Cause and Effect Matrix for AAA

#	Name	Description	Designation	1	2	3	4	Effekt
1	ESDLevel1		ZLEV1					X
2								
3								
4								
5								
6								
7								
1	Cause1		ZCAU1	X				X
2	regsfs							
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								

8b

#	Name	Description	Designation	1
1	ESDLevel1		ZLEV1	
2				
3				
4				
5				
6				
7				
#	Name	Description	Designation	1
1				
2	regsfs			
3				
4				
5				

#	Name	Description	Designation	1
1	ESDLevel1		ZLEV1	NO
2				NO
3				NO
4				NO
5				NO
6				NO
7				NO
#	Name	Description	Designation	1
1				NO
2	regsfs			NO
3				NO
4				NO
5				NO

8c

Fig. 3 cont.

ABB Safety Manager, Cause and Effect Matrix editor (Safety Builder)

Plant
+ Areal1

Cause and Effect Matrix for AAA

#	Name	Description	Designation		1	2	3	4	Effekt
1	ESDLevel1		ZLEV1	NO					X
2				NO					
3				NO					
4				NO					
5				NO					
6				NO					
7				NO					
#	Name	Description	Designation		1	2	3	4	Effekt
1	reqsfs			NO					X
2				NO					
3				NO					
4				NO					
5				NO					
6				NO					
7				NO					
8				NO					
9				NO					
10				NO					
11				NO					
12				NO					
13				NO					

9

ABB Safety Manager, Cause and Effect Matrix editor (Safety Builder)

Digital Signals

Name	Description	Assign	Normal Value
SampleboolIn1	Sample signal	IX0.11.1.1	ND
SampleboolIn2	Sample signal	Unassigned	ND
SampleboolIn3	Sample signal	Unassigned	ND
SampleboolOut4	Sample signal	Unassigned	ND
SampleboolOut5	Sample signal	Unassigned	ND
SampleboolOut6	Sample signal	Unassigned	ND

Digital Analog

10

Fig. 3 cont.

10

ABB Safety Manager, Cause and Effect Matrix editor (Safety Builder)

Digital Signals

Name	Description	Assign	Normal Value
▶ SampleboolIn1	Sample signal	IX0.11.1.1	ND
SampleboolIn2	Sample signal	Unassigned	ND
SampleboolIn3	Sample signal	Unassigned	ND
SampleboolOut4	Sample signal	Unassigned	ND
SampleboolOut5	Sample signal	Unassigned	ND
SampleboolOut6	Sample signal	Unassigned	ND

11

ABB Safety Manager, Cause and Effect Matrix editor (Safety Builder)

Controller

Controller name: CemController

IP Address: 172.16.0.0

Controller Type: AC 800M HI Create

Controller Hardware Units

- ▼ CemController.0
 - +...▼ ModuleBus

12

ABB Safety Manager, Cause and Effect Matrix editor (Safety Builder)

Controller

Controller name: CemController

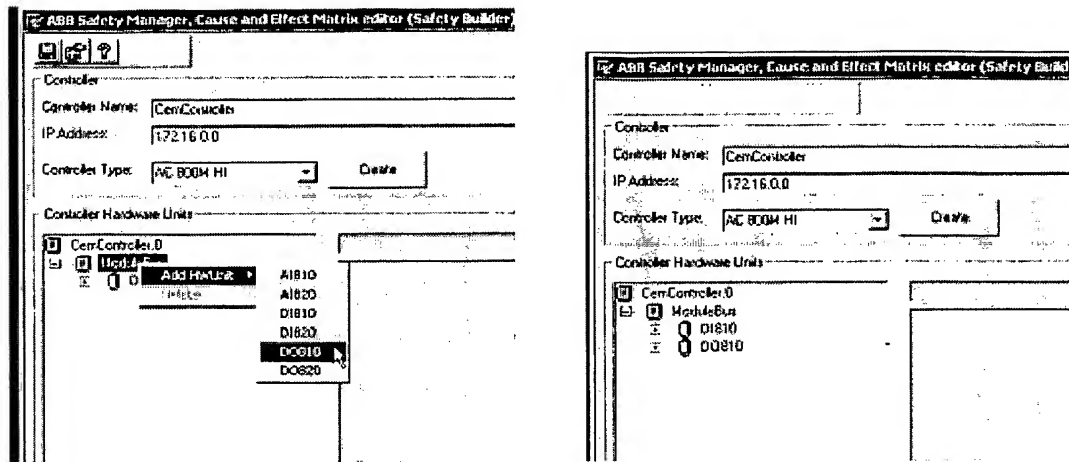
IP Address: 172.16.0.0

Controller Type: AC 800M HI Create

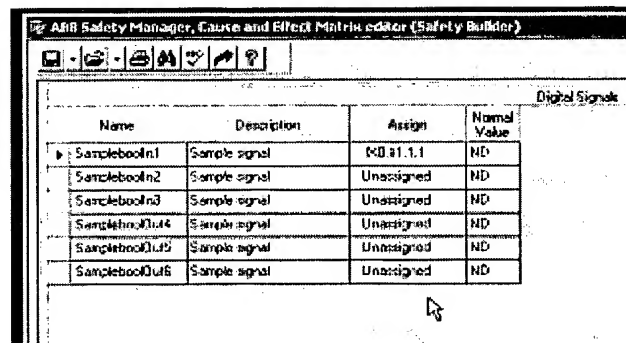
Controller Hardware Units

- ▼ CemController.0
 - +...▼ ModuleBus
 - ⌵ 0 ▶
 - Add HW Unit ▶
 - AI810
 - AI820
 - DI810
 - DI810
 - D0810
 - D0820
 - Delete ▶

Fig. 3 cont.

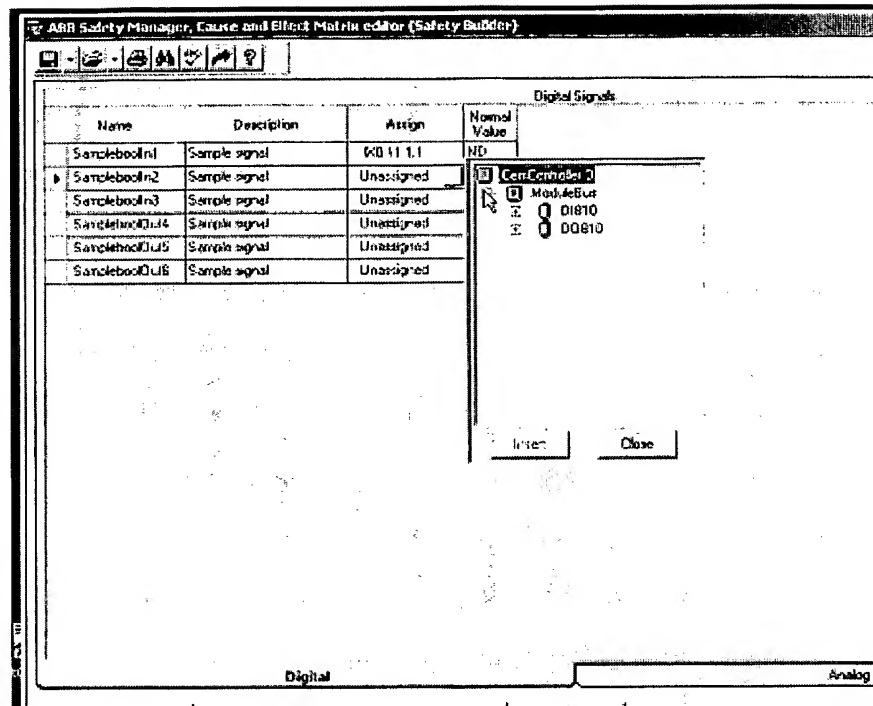


13

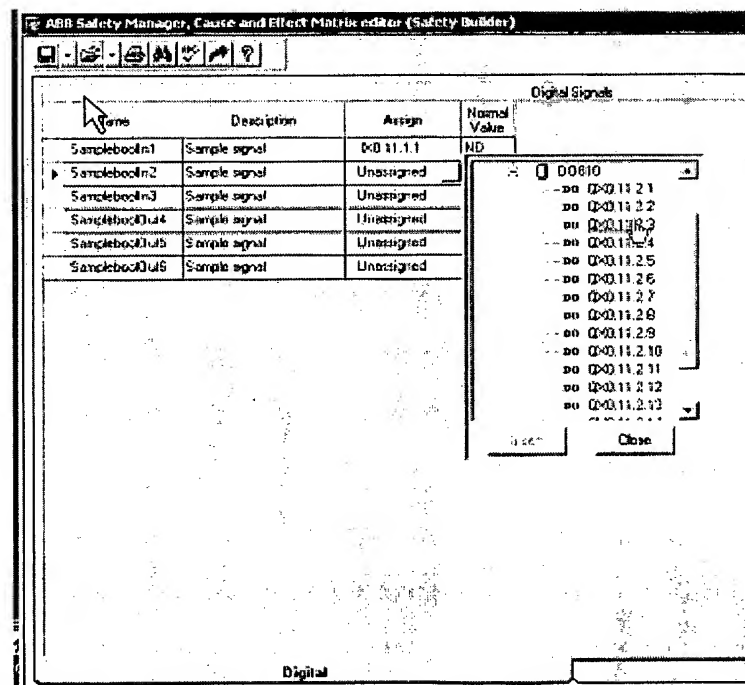


14

Fig. 3 cont.

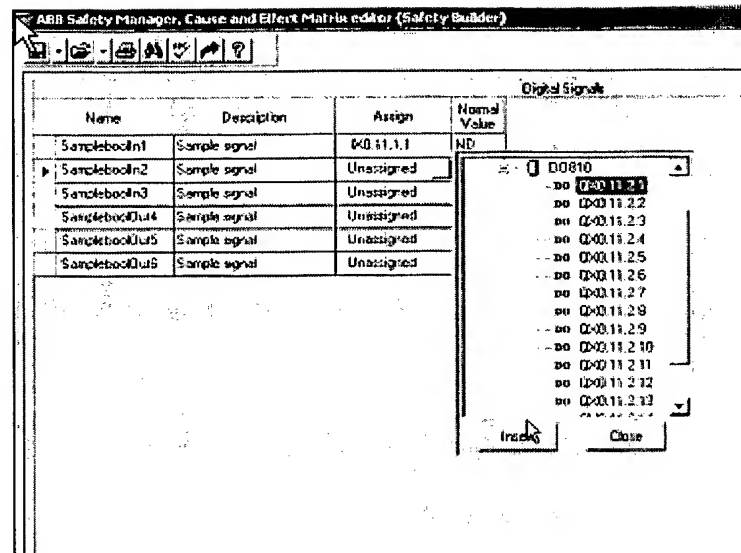


15a

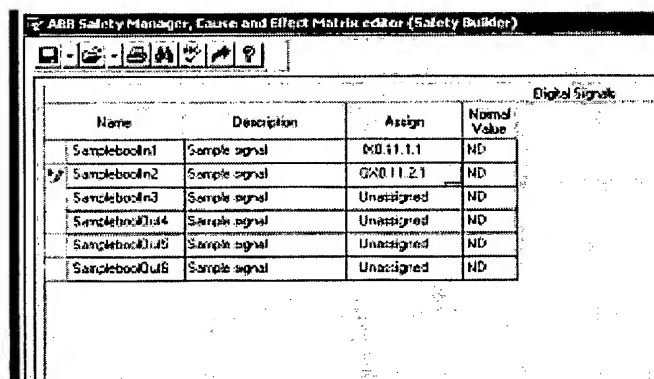


15b

Fig. 3 cont.



15c



16

Fig. 3 cont.

17

ABB Safety Manager, Cause and Effect Matrix editor (Safety Builder)

Controller

Controller name: CemController

IP Address: 172.16.0.0

Controller Type: AC 800M HI

Controller Hardware Units

- ☒ CemController.0
 - ☒ ModuleBus

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ABB Safety Manager, Cause and Effect Matrix editor (Safety Builder)

Controller

Controller name: CemController

IP Address: 172.16.0.0

Controller Type: AC 800M HI

Controller Hardware Units

- ☒ CemController.0
 - ☒ ModuleBus

Fig. 3 cont.

ABB Safety Manager, Cause and Effect Matrix editor (Safety Builder)

Project structure for AAA matrix

Project name: CEMAAA
 Application Name: CemApp
 Task Name: CemTask
 Task Interval (ms): 500

Code Generation Options

☐ Use Soft Controller IP Addr.
☐ Use Designations only
☒ Skip where no CEM intersections
☐ Direct input to Control Builder

Generator

Generate
 View Errors
 Download
 Go Online

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ABB Safety Manager, Cause and Effect Matrix editor (Safety Builder)

Project structure for AAA matrix

Project name: CEMAAA
 Application Name: CemApp
 Task Name: CemTask
 Task Interval (ms): 500

Code Generation Options

☐ Use Soft Controller IP Addr.
☐ Use Designations only
☒ Skip where no CEM intersections
☐ Direct input to Control Builder

Generator

Generate
 View Errors
 Download
 Go Online

20

ABB Safety Manager, Cause and Effect Matrix editor (Safety Builder)

Project structure for AAA matrix

Project name: CEMAAA
 Application Name: CemApp
 Task Name: CemTask
 Task Interval (ms): 500

Code Generation Options

☐ Use Soft Controller IP Addr.
☐ Use Designations only
☒ Skip where no CEM intersections
☐ Direct input to Control Builder

Generator

Generate
 View Errors
 Download
 Go Online

Fig. 3 cont.

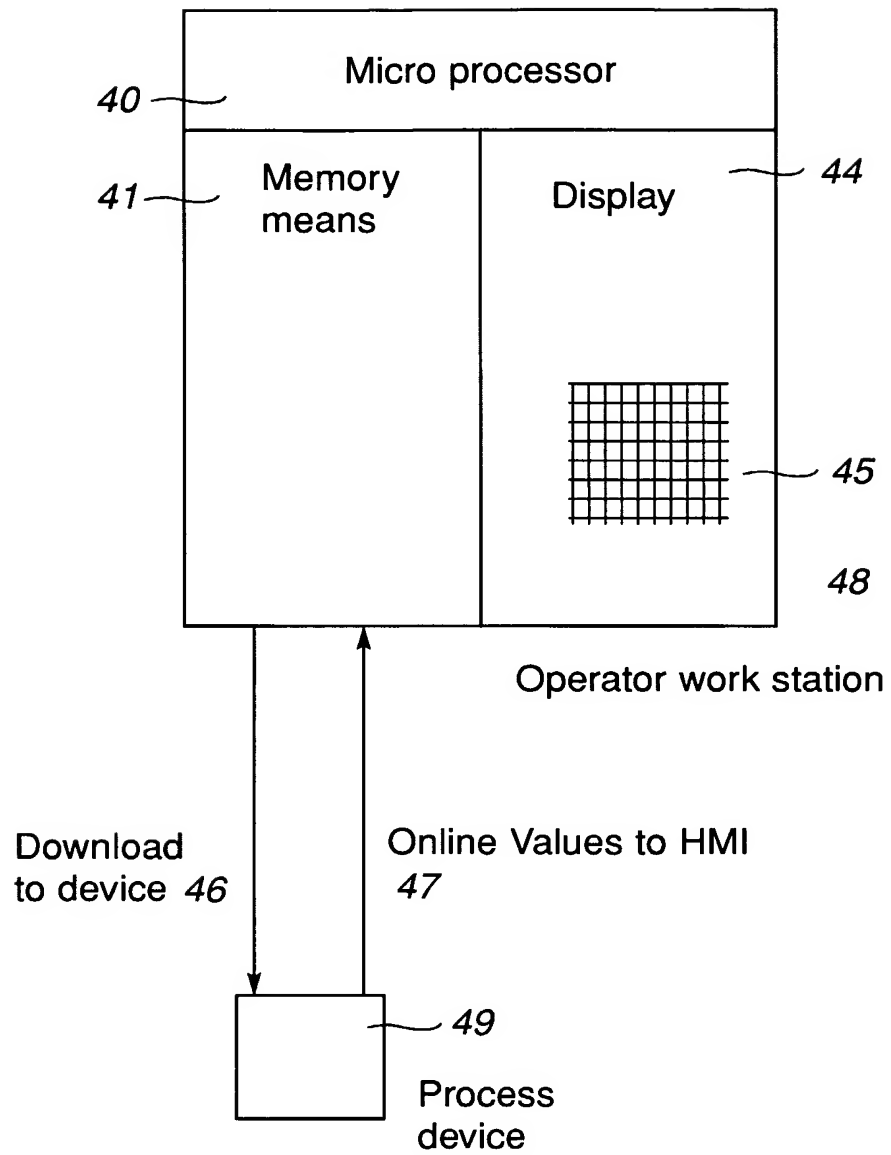


Fig. 4

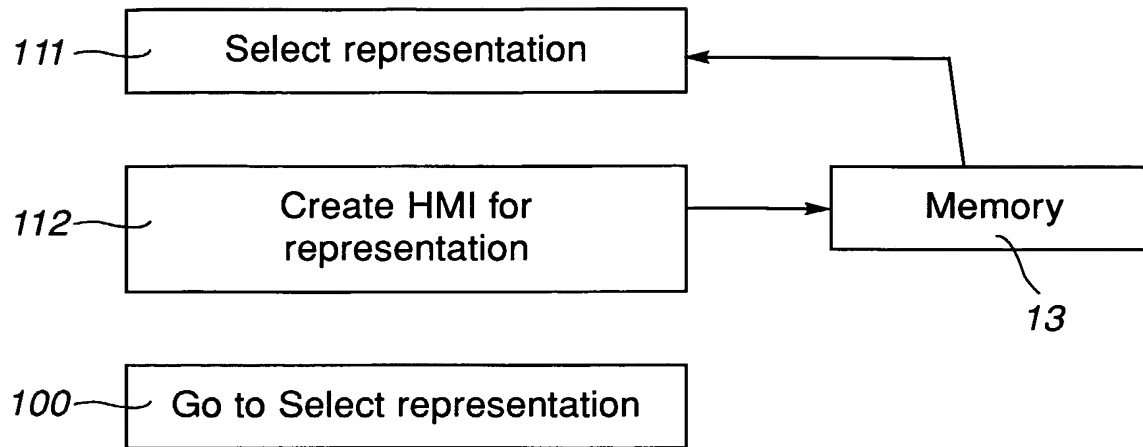


Fig. 5a

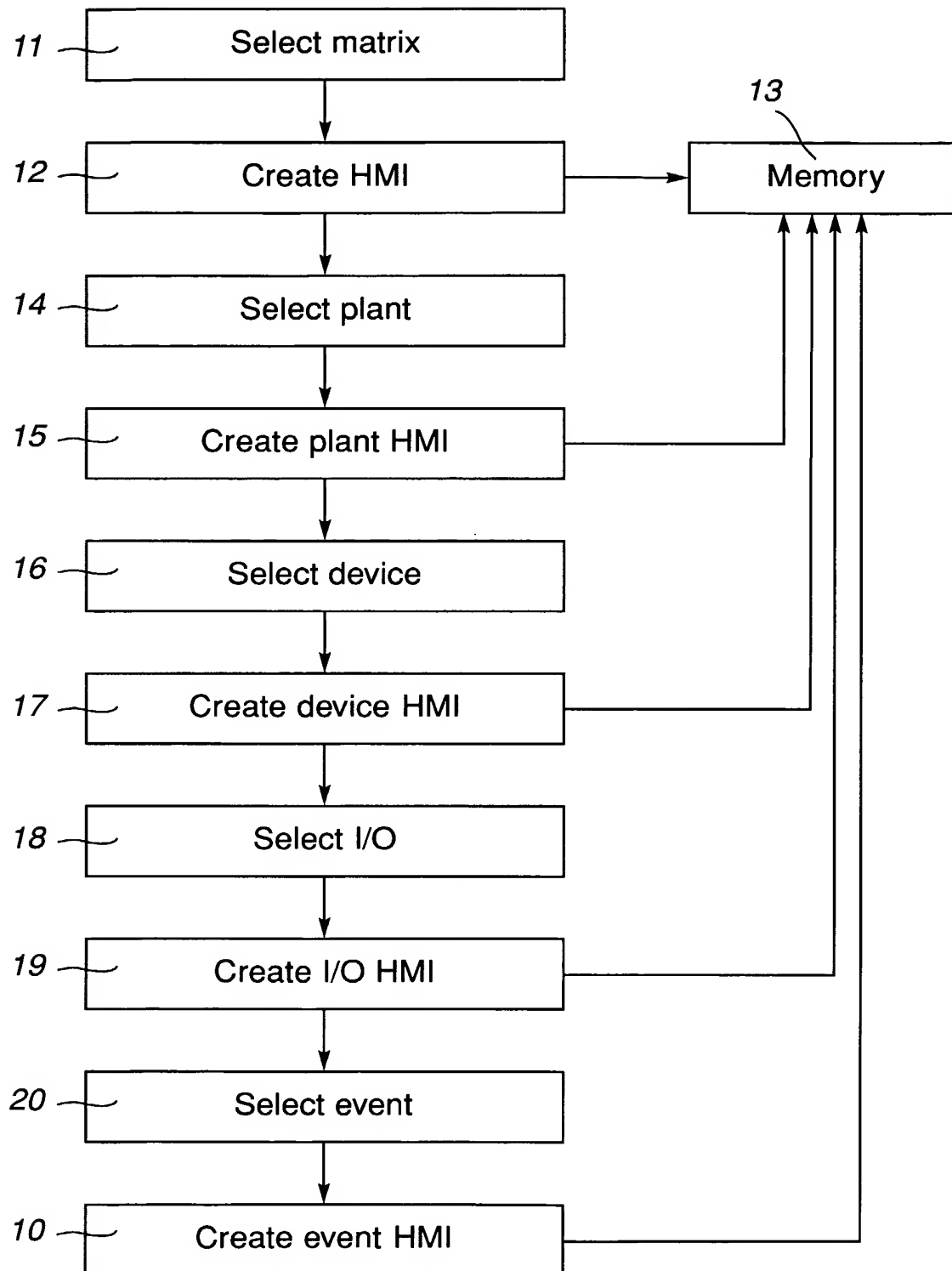


Fig. 5b

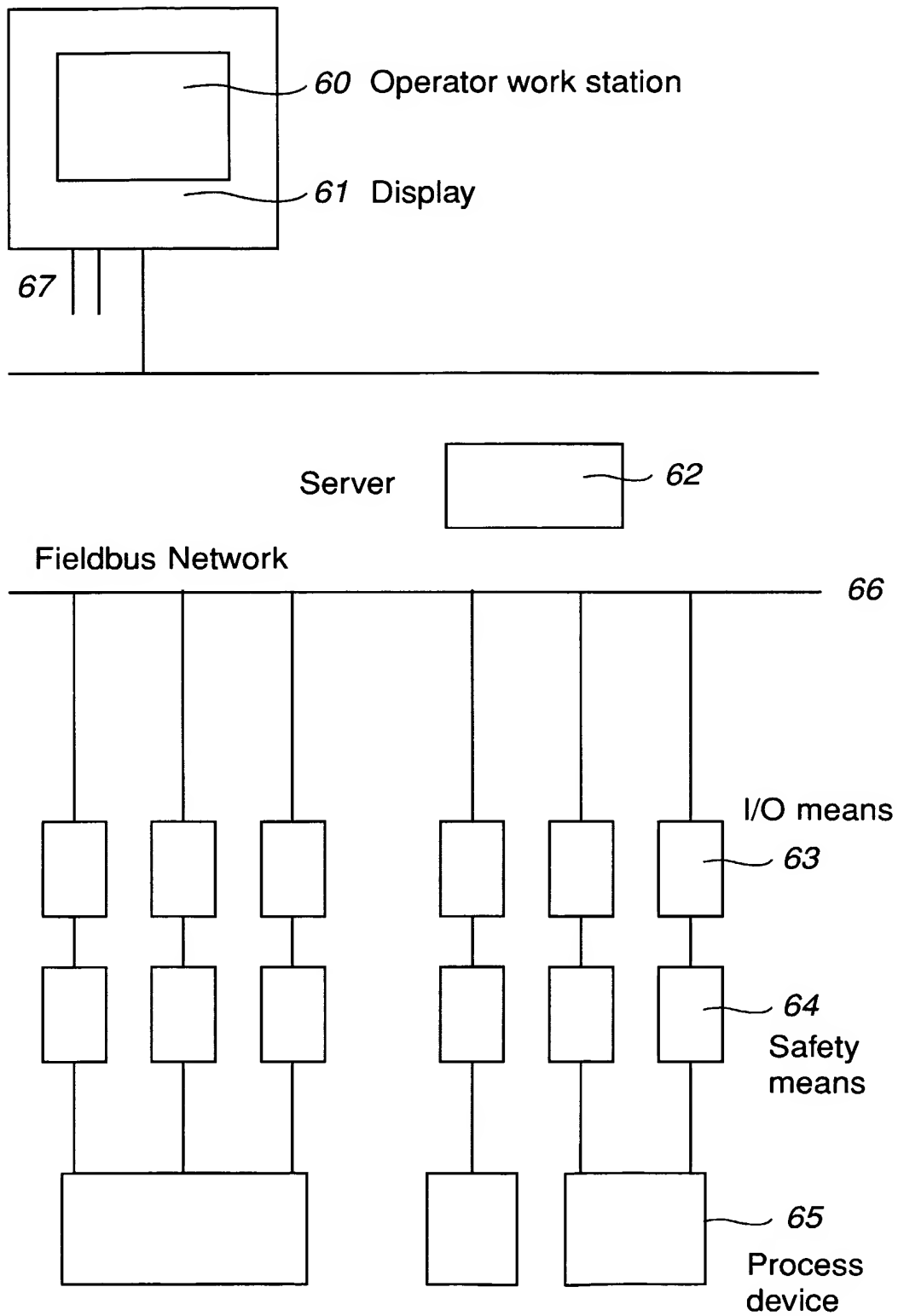


Fig. 6